

## ABSTRACT OF THE DISCLOSURE

A link mechanism to determine the position and the direction is provided which mechanism has a high precision of position and direction determination, does not requires strong actuators, and is mechanically simple easy to maintain MR compatibility, cleanable and sterilizable. The link mechanism has: an axial rod; and two spherical bearings to support the axial rod, the two spherical bearings being capable of changing positions, wherein the motion of one of the two spherical bearings relative to the axial rod along the axis is constrained, and the other of the spherical bearings can travel along the axial rod.